

REMARKS

Claims 9 and 22 are amended. No other claims are amended, canceled, or added. Thus, claims 1, 3-13, and 18-25 are pending. Reconsideration of the above-referenced application is requested in light of the amendments and the following remarks.

Summary of Interview with the Examiner

On January 23, 2007, Applicants' patent attorney Jose R. Mata sent a fax to Examiner Leila Malek requesting an interview to discuss the Shattil reference (U.S. Patent Publication 2004/041548) ("Shattil") which is relied upon for Section 102(e) rejections in the Office Action of November 15, 2006. The fax stated as follows:

I would like to request an interview to discuss the Shattil (U.S. Patent Publication 2004/041548) which is relied upon in the recent office action of November 15, 2006. Shattil has a filing date of December 8, 2003, which is after our filing date of September 28, 2001.

Shattil states it is a continuation in part of application no. 09/906,257, now U.S. Patent 6,686,789 (filed July 16, 2001). Shattil also relies on provisional no 60/219,482, which apparently was filed July 19, 2000.

However, with respect to at least paragraphs [0067], [0014] and [0082-0083] and Fig. 12, of Shattil which are cited against the independent claims, I have not found any support for that subject matter in either the parent U.S. Patent 6,686,789 or the provisional 60/219,482.

I would like an interview to discuss where the Office believes such support might exist in either the parent reference or the provisional on which Shattil relies for its priority date. Our response is due February 15, 2007.

Jose Mata conferred by telephone with Examiner Leila Malek on January 23, 2007. Examiner Malek stated that even if the Shattil reference is not supported by the parent application or the provisional application, Applicants would still need to file a response pointing out the lack of support.

At that time, Examiner Malek had not yet received the above fax. It was agreed that Examiner Malek would review the fax and confer further regarding whether the specific paragraphs of Shattil discussed in the fax are supported by the parent patent and the provisional application.

Jose Mata conferred by telephone with Examiner Malek again on February 7, 2007. There was agreement that there was no support for paragraphs [0067], [0014] and [0082-0083] and Fig. 12 of Shattil in either the parent U.S. Patent 6,686,789 or provisional application no. 60/219,482. Applicant would file a response noting the lack of support.

Examiner Malek stated that claims 19 and 20 appear too broad and recommended narrowing these claims. A new search would be needed if these claims retained their current breath. No agreement was reached on narrowing these claims.

Objection to the Abstract

The Office Action of November 15, 2006 (“Office Action”) objects to the Abstract as exceeding the 150-word limit. (Office Action, p. 2). Applicant amends the Abstract to bring it within the limit. The replacement Abstract is attached as Exhibit A hereto. Applicants respectfully request that the objection to the Abstract be withdrawn.

Claim Objections

The Office objects to language in claim 9 as being inconsistent with the specification. (Office Action, p.2). Specifically, the Office contends that claim 9 recites an extended sequence such that “each complex number pair is equal to the previous complex number pair multiplied by $\exp(j2\pi/M)$.” In contrast, page 19, line 1 of the specification states that the previous complex number pair is multiplied by “ $\exp(2\pi/M)$.”

Applicant amends claim 9 to be consistent with the above portion of the specification and therefore respectfully requests that the objection be withdrawn.

Claim Rejections under 35 U.S.C. § 101

Claims 1, 3-13 and 18

The Office Action rejects claims 1, 3-13 and 18 under Section 101 as “directed to non-statutory subject matter, because as a whole it does not accomplish a practical application.” (Office Action, p. 3). The Office Action further asserts that, “Applicant in claim 1 does not cite any use for the generated training signal. Therefore the claim lacks practical application.” *Id.*

Applicants assert that the above claims do recite subject matter that has a practical application. Independent claim 1 recites generating a training sequence: “such that a training sequence can be generated . . .” Training sequences have a well-known utility in the communications industry. This utility is discussed in the specification:

For synchronization and calibration purposes, each burst includes a training sequence. The training sequence contains a known symbol set transmitted for quality control purposes. Since the data or symbol sequence is known, the characteristics of the received signal can be accurately measured and interpreted. Training sequences can be used for computing spatial and temporal filter weights at a base station in order to reduce intersymbol interference and co-channel interference, and increase the signal to noise ratio.

(Specification, p. 2, ¶ [0002]).

Thus, the generated training sequences of claim 1 have a practical application. Therefore, claim 1 recites subject matter with a useful, concrete and tangible result. Claim 1 thus recites statutory subject matter. *Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility* (“Interim Guidelines”), p. 1, citing

State Street Band & Trust Co. v. Signature Financial Group Inc., 149 F.3d 1368, 1373-74

(Fed. Cir. 1998).

The practical application of the recited training signals does not need to be recited in the claim itself. The description of the practical application may be in the detailed description of the specification. The MPEP states that, “USPTO personnel should review **the application** to identify any asserted use.” MPEP § 2106(II)(A)(Emphasis added). The “application” that must be reviewed “to identify any asserted use” clearly includes the specification.

The MPEP further states that, “USPTO personnel should review the totality of the evidence (e.g., **the specification**, the claims, relevant prior art) before reaching a conclusion with regard to whether the claimed subject invention sets forth patent eligible subject matter.” MPEP § 2106(IV)(D)(Emphasis added). “The Examiner bears the initial burden . . . of presenting a *prima facie* case of unpatentability.” *Id.*, quoting *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). Here, no *prima facie* case of unpatentability has been presented.

Instead, claim 1 recites generating training signals, which are well-known to have a practical application. Claim 1 therefore recites statutory subject matter. Dependent claims 3-13 and 18 are deemed to recite this same statutory subject matter. Applicants therefore respectfully request that the Section 101 rejections of claims 1, 3-13, and 18 be withdrawn.

Claims 22-25

The Office Action rejects claims 22-25 under Section 101 as purportedly not accomplishing a practical application. (Office Action, p. 3). However, independent claim 22 recites obtaining a set of training sequences. For the reasons discussed above

regarding claims 1, 3-13, and 18, Applicants assert that claims 22-25 recite statutory subject matter.

The rejection of claim 22 is supported by an argument against the word “having” in the claim preamble, “a computer-readable medium having instructions.” (Office Action, p. 3). The word “having” is considered ambiguous. *Id.* The Office suggests the use of “a computer readable medium encoded with computer executable instructions” instead. Independent claim 22 is so amended. Thus, Applicants believe that the Section 101 rejections of claims 22-25 are obviated and respectfully request that the rejections be withdrawn.

Claim Rejections under 35 U.S.C. Section 102(e)

The Office Action rejects claims 1, 6-8, 10-12, 18, 22, and 25 under Section 102(e) as anticipated by Shattil – which is discussed above under the heading “Summary of Interview with the Examiner.” As discussed above, Shattil has a filing date of December 8, 2003, which is after the September 28, 2001 filing date of the current application. Further, as discussed above, the Office concedes that at least paragraphs [0014], [0067], [0082-0083], and Fig. 12 of Shattil are not supported by either the parent U.S. Patent 6,686,789 or provisional application no. 60/219,482. Thus, at least these paragraphs and Fig. 12 of Shattil may not be used to support rejection of the current application under Section 102(e). In making this argument, Applicants do not admit that any of the above paragraphs or Fig. 12 teaches or suggests any subject matter recited by the claims of the current application.

Reviewing the rejections of the independent claims, Applicants note that paragraphs [0014], [0067], and [0082-0083] of Shattil are cited to reject various limitations of independent claim 1. For example, [0067] is the only portion of Shattil that

is cited as describing, “that a training sequence may be generated from any one of the modified extended sequences by beginning with the first element of a subsequence of the any one modified extended sequence and taking each element of the sequence in order to obtain the training sequence.” (Office Action, p. 4, ¶ 5). Thus, Shattil cannot teach at least the above limitation of claim 1. Shattil therefore does not anticipate independent claim 1.

The Office Action cites paragraphs [0014], [0067], and paragraphs [0082-0083] to reject various limitations of independent claim 22. (Office Action, p. 6). For example, Shattil paragraphs [0014] and [0082-0083] are the only paragraphs cited as describing, “modify each original ordered sequence of the set of ordered sequences using a corresponding modifying sequence (shaping of the prefix and postfix has been interpreted as modifying the sequence).” *Id.* Further, paragraph [0067] is the only authority cited as describing, “to obtain a set of training sequences.” *Id.* Thus, Shattil cannot teach at least the above limitations of claim 22. Shattil therefore does not anticipate independent claim 22.

Dependent claims 6-8, 10-12, 18, and 25 each depend from one of independent claims 1 and 22. These dependent claims are deemed to recite the subject matter of their respective independent claim. Therefore, dependent claims 6-8, 10-12, 18, and 25 are also not anticipated by Shattil. *See*, MPEP § 2143.03.

Rejections under 35 U.S.C. § 103(a)

The Office Action rejects claims 3, 4, 5, 13, 19, 20, 21, and 23-24 under Section 103(a) as being unpatentable over Shattil in view of Engstrom et al. (U.S. Patent No. 5,909,436) (“Engstrom”). Applicants assert that for at least the reasons stated below, the above claims are not rendered obvious by the combination of Shattil and Engstrom.

As discussed above, Fig. 12 of Shattil may not be used to reject claims of the current application. Turning first to the rejection of independent claim 19, the Office cites only Fig. 12, blocks 1210 and 1212 of Shattil as describing a claimed “processor to generate the training sequence by taking and modifying a number of elements of one of the plurality of ordered sequences.” (Office Action, p. 8). However, as discussed above, Fig. 12 of Shattil cannot be relied upon as teaching any limitations of the current application.

Also, Engstrom is not cited as teaching or suggesting the above limitation. Instead, Engstrom is cited as describing “that a function of an autocorrelation of the training sequence is below a threshold value.” (Office Action, p. 9).

Thus, the combination of Shattil and Engstrom cannot teach or suggest at least the above limitation of claim 19. Therefore, claim 19 is not rendered obvious by the combination of Shattil and Engstrom.

Dependent claims 3, 4, 5, 13, 20, 21, and 23-24 depend from one of independent claims 1, 19, and 22. As discussed above, claim 19 is not rendered obvious by the combination of Shattil and Engstrom. Further, Shattil cannot teach or suggest all the limitations of claims 1 and 22. Nor is Engstrom cited as describing any of the limitations of claims 1 and 22. Therefore, claims 1 and 22 are not rendered obvious by the combination of Shattil and Engstrom. Dependent claims 3, 4, 5, 13, 20, 21, and 23-24 are thus also not rendered obvious by the combination of Shattil and Engstrom. MPEP § 2143.03.

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CONCLUSION

Applicants respectfully submit the present application is in condition for allowance and request reconsideration. If the Examiner believes a telephone conference would expedite or assist in the allowance of the present application, the Examiner is invited to call Jose Mata at (503) 439-8778.

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN

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